

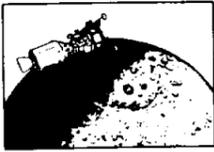


ORIGINAL EMPLOYEES—The 14 original employees of the Flight Research Center at Edwards, California can be seen in this picture of the B-29 launch aircraft. The B-29 was used to launch the D-558 II Skyrocket, the first aircraft to fly twice the speed of sound. MSC's Leroy Proctor is second from the right in the front row. (See story on page 4).

ROUNDUP

NASA MANNED SPACECRAFT CENTER

HOUSTON, TEXAS



Vol. 11 No. 26

November 10, 1972

Apollo-Soyuz Flight Plans Advance

Agreements reached during the meetings in Moscow between the United States and the Soviet Union October 9-20 represent major steps toward the goal of a cooperative manned space mission in 1975.

The purpose of the meeting was to discuss specific technical problems and to agree on common technical and organization documents which will govern the preparation and conduct of the test flight.

"Cooperation between the joint working groups is excellent and we have established a sound basis in many of the detailed technical areas," reported Glynn S. Lunney, U. S. Project Technical Director for the Apollo-Soyuz Test Project.

The mission in which American and Soviet crews will exchange visits after linking their spacecraft in earth orbit is designed to test equipment and techniques which will permit cooperative scientific missions as well as establish an international crew rescue capability in space.

Progress was made in subjects connected with the Apollo-Soyuz Test Project. These subjects include the atmospheric pressures to be maintained in the Apollo and Soyuz spacecraft during the docked phase, the definition of crew transfer operations, further detailed definition of the launch windows and trajectory plan, and the attitude profile and control of the spacecraft during rendezvous and docking.

Also, the work of documentation was advanced and schedules were established for further exchange of project information.

There are five joint working groups in the project. These groups will meet at MSC in March

1973. Preliminary discussions on the subject of joint experiments will begin then.

The project technical directors, Lunney for the U. S. and Prof. K. D. Bushuyev for the U. S. S. R. will meet when necessary.



TOP RUSSIAN SCIENTIST VISITS MSC—Academician M. V. Keldysh (right), President of the Academy of Sciences, USSR, is presented a desk model of a docked Apollo-Soyuz spacecraft by Dr. James Fletcher, NASA Administrator. Keldysh was in Houston to tour the Manned Spacecraft Center. Seated in the center background is Col. Thomas P. Stafford, Deputy Director of MSC Flight Crew Operations.

Apollo 17 Night Launch To Be Spectacular

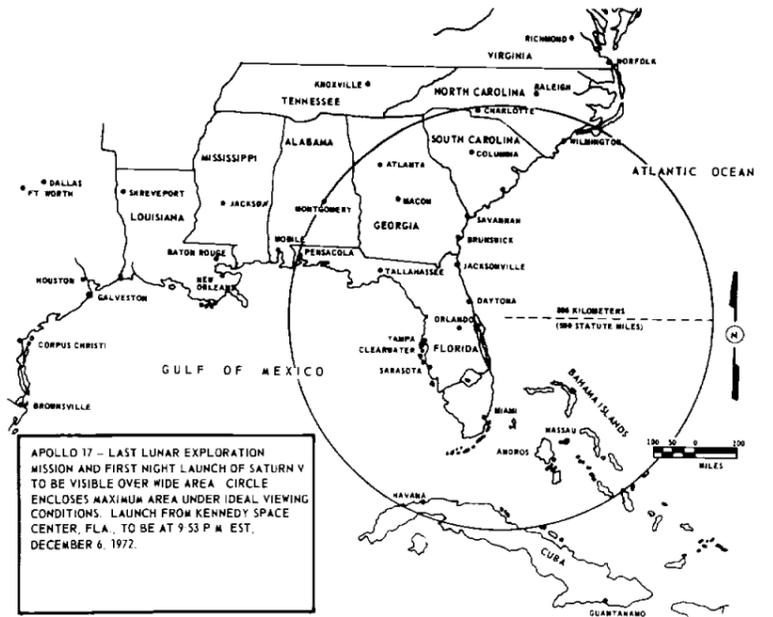
The night launch of Apollo 17, scheduled for 9:53 p.m. EST, December 6, 1972, will be a spectacular sight and a once-in-a-lifetime opportunity for camera buffs.

The final lunar landing mission in the Apollo program is the first mission to require a nighttime launch of the giant Saturn 5 launch vehicle.

foot candles are emitted and reflected at the base of the launch pad giving an almost daylight exposure.

Searchlight illumination for in-flight coverage will not be available beyond the first 18 meters (60 feet) of flight.

Amateur photographers using (Continued On Page 2)



Prior to launch, the space vehicle will be surrounded by searchlights producing approximately 225 foot candles of light. A total of 70 20-kilowatt xenon searchlight banks will provide the illumination.

The light emitted by the first stage booster engines at ignition gives no appreciable increase in vehicle illumination until liftoff is achieved.

At liftoff, approximately 7,500

Room Available On Charter Plane To Cape Kennedy

The MSC Travelers announced that there is still room on the charter flight to the Cape to view the Apollo 17 launch.

Those who have been contemplating going on the flight should let the club know, as this will help determine if the second plane will go or not.

If the club does not have a full plane, they will try to arrange a commercial flight but it may be at a higher cost.

So if you plan on going, get your reservations in now.

Cut-off date is November 21.

The club has scheduled a general membership meeting November 21, Building 30 auditorium at 5 p.m.

If you still need more information on the flight, come to the meeting and ask questions.

1972 Gulf Coast CFC Successful

The MSC Gulf Coast Combined Federal Campaign for 1972 has been successfully completed. Contributions amounting to \$136,632.72, 103% of the MSC goal, were given by 3,679 NASA MSC, Headquarters and other staff or liaison organization personnel.

White Sands Test Facility federal employees committed a total of \$1,631.70, 77 per cent above the established goal of \$921.60. The employee's average contribution was \$33.99 as compared



PSC GRADUATES—Nine MSC employees received graduation certificates after completing the first Public Service Careers Program held at the Center. Trainees under the PSC Program are selected from a Civil Service register and are given Career Conditional appointments. From left to right, standing: Dorothy Denkins, Rosalind Keal, Maxine Sapp, Joyce Chambers, Rita Douglas. Seated: Gloria Martinez, Jo Ann White, Silvia Hernandez, Mary Broussard.

NEBA Reissues All Certificates To Members

Roy C. Aldridge, President of the MSC Chapter of NASA Employees Benefit Association, announced that new certificates would be issued to each member of the NEBA Travel Accident Life Insurance plan.

Normally there is no need to re-issue certificates of this nature, but due to the numerous changes between plans, changes in the amount of coverage, and the inclusion of spouse coverage, the local chapter officers felt that it would be advantageous to MSC NEBA members to re-issue all certificates.

Preparation of the new certificates has been underway for sometime. Mailouts are expected to start about the middle of November and should be completed by December 15th.

NEBA Travel Accident Life Insurance Coverage is offered for personal or business travel in amounts of \$25,000, \$50,000 and \$100,000. Spouse coverage is also offered. Brochures explaining the various plans of coverage are available at the NEBA office, room 360, building 4. Copies will be mailed on request by calling extension 5410.

MSC Cafeteria Prepares Turkeys For Employees

The MSC Cafeteria will be preparing complete Holiday Turkey Dinners again this year. The Dinner includes:

- 1 fully-cooked turkey (feeds 10-12 people)
- 2 quarts cornbread dressing
- 1 quart giblet gravy
- 1 pumpkin pie - 10"
- 1 lb. cranberry sauce

All this for only.....\$13.75

Additional quantities may be ordered:

Cornbread dressing	Qts.	95c
Giblet gravy	Pts.	75c
Pies	10"	1.75

All orders must be placed by 4 p.m. two days before pick up. All orders must be picked up by 4 p.m. the day previous to the holiday.

To place orders, dial extension 5905.

Apollo 17—

(Continued From Page 1)

nonadaptable cameras will probably be unable to obtain a satisfactory photo during the pre-launch phase but will be able to obtain images of liftoff.

Astroworld Gets Literal Meaning

Astroworld will assume a literal meaning Saturday, November 18, when MSC employees take advantage of NASA day there.

All rides, shops, shows and attractions operated by Astroworld during the regular Fall season will be in operation for NASA employees, contractors and their families from noon to 6 p.m.

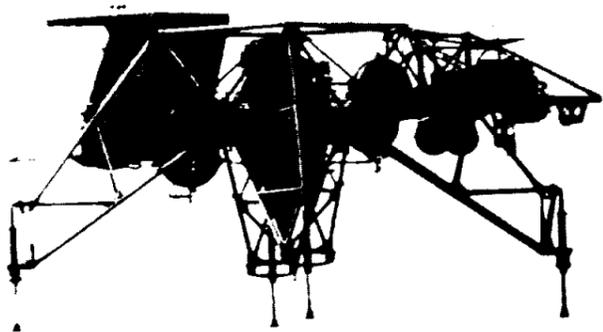
Tickets are \$2.00 and must be obtained from EEA representatives before November 13 as none will be sold at Astroworld. Children under three will be admitted free.

Busch to Speak At ASQC Dinner

Arthur W. Busch, Regional Administrator of the Environmental Protection Agency, Region VI, will be the dinner speaker at the American Society of Quality Control South Texas Section meeting Tuesday, November 14, 1972.

The meeting will convene at 6 p.m. at the Ranch House Restaurant, 8215 Telephone Road, Houston, Texas, with dinner at 7 p.m. Busch will speak on "Quality Control of Our Environment."

For information, contact Richard Kessler at Strand Steel Corporation, telephone (713) 466-6311 or write to the Chairman, South Texas Section ASQC, 1653 Neptune Lane, Houston, Texas, 77058.



CERNAN FLYS LLTV—Apollo 17 Commander Eugene Cernan makes a practice lunar landing in the Lunar Landing Training Vehicle (LLTV) during a training flight at Ellington AFB, October 30. The LLTV simulates the landing characteristics of the Lunar Module in a one-sixth g environment. A turbofan jet engine provides five-sixths of the lift for the LLTV and two throttleable lift rockets support the remaining one-sixth. Control is provided by 16 small attitude rockets. This was Cernan's 36th flight in the LLTV.



FLIGHT CREW Health Stabilization Program poster, one of a series now on display throughout MSC.

ROUNDUP

NASA MANNED SPACECRAFT CENTER HOUSTON, TEXAS

The **Roundup** is an official publication of the National Aeronautics and Space Administration Manned Spacecraft Center, Houston, Texas, and is published every other Friday by the Public Affairs Office for MSC employees.

Editor: Janet Wrather Photographer: A. "Pat" Patnesky

Roundup Swap-Shop

Swap Shop advertising is available to MSC and on-site contractor personnel. Articles or services must be offered as advertised, without regard to race, religion, sex or national origin. Ads should be 20 words or less, including home telephone number. Name and office code must accompany, but need not be included in, ad copy. Typed or printed copy must be received (AP3 Attn: Roundup) by Thursday of the week before publication.

MISCELLANEOUS

Facial sauna, \$10. Corner group w/ 5 bolsters, new \$250, will sell \$149. Maternity clothes, sizes 11 & 12, bath table \$10. Bell and Howell reg 8 movie proj. & camera, \$80. 488-2248.

Revere 8mm movie proj and Kodak movie camera w/ indoor lights, x/nt cndn. \$50. 488-1243.

Electronic organ, Thomas Paramount, horse shoe cnsl, 19 voices plus band box, Leslie speaker, chimes, etc., like new, \$1350, 333-3988.

Skis, brand new, Fisher RSL 205, \$150. x474 664-6438

Baby carriage, x/nt cndn, blue-green-plaid, includes pad & 2 sheets, \$45 cost, will sell for \$20. 645-1001.

Cann Professional Model Tenor Sax, less than 2 yrs old, x/nt cndn, list price new \$550, asking \$375, 534-3625.

Misc antiques, lrg milk can, \$14. metal butter churn, \$40, hand irons, \$6, pitcher pump, \$20, iron pots, \$8. 471-4305.

Crib, playpen, infant seat, other misc items, x/nt cndn. 333-2659.

Ideal Christmas gifts, genuine Kashmir handicrafts, walnut wood carvings, Karik-amdani, embroideries, rugs (Namdas) 488-0417.

3 tires, A78-13 Firestone Delux, champs-bld, 2 hbcs, 1 wheel for 1967 Toyota, all in good cndn, \$35. 471-4305.

1 hp hvy dutyelectmotor 110 220 VAS x/nt cndn, \$35 488-4086 after 5 pm.

Panasonic Quad stereo, 2 mos old, \$175, 479-7815.

Novice ham sta, Hammerlund supr pro recvr, heath DX-40 trans, heath HG-10 VFO, bug crystals, antenna, 100 ft of RG 58, spare tubes, \$100, 481-3551.

3 pistols, all new, Luger, \$65. 380 Auto \$40, 38 Splc revolvr, \$35, 483-4166.

HOUSEHOLD ARTICLES

Pair of Maple twin frames, rdy to use, \$35. also available, matching nite stand sm table & ch of drawers, 471-4305.

Air conditioner, 1 ton, 110 volts window unit, \$50, 488-0719.

6 window air-c unit, incl 2 heat pumps, range in size, 1/2-2 tons, (521-9805.

Baby crib and mattress, x/nt cndn, \$35. kingsz bed frame \$5. super-8 movie camera, \$18. Sylvania movie lite \$5. Belt vib \$10 488-3409.

G.E. refrig, x/nt cndn, white, 2-dr, freezer at top, \$75. 488-3238.

Nw Grandfather clocks, German Movement, Westminster chime, spc design solid walnut case, guaranteed, moon dial \$325, ff dial \$300. 488-2797.

Frigidaire refrige, old but looks good, runs well, \$35, 944-1257.

RCA 18" port b & w tv, very gd cndn, \$50. GE 19" port b & w tv, nds repair, \$25. Dressmaker Sewing Machine, cnsole, used once, x/nt cndn, \$235 cost, will sacrifice for \$165. Sngl twm bed w/ box springs & mattress, x/nt cndn, \$40, Carol x4731.

Color tv, used, 23 inch, gd cndn, \$95, 482-3163.

72 Maytag elec washer and gas dryer, \$300. 72 Gibson 21 c.f. Sidexside refriglicemaker, \$390, mint cndn, warranties, 488-1714.

VEHICLES

71 Suzuki 125 mx k & g lowered frame, 21" fr wh, fork br, Preston Petty fenders, quick, \$490, 333-3544.

70 Kawasaki 90, gd cndn, \$210, 333-3544.

65 green Chevy van hunter/s special \$795, 483-5316.

56 Chevy std trans, 8 cyl x/nt cndn, \$300, 944-3586.

70 VW like new, white w/ red, all vinyl int. nw tires radio, accessories, \$1395, 334-1772.

63 Pont Lamans, std trans 326 eng completely overhauled, x/nt cndn, \$500, 994-3586.

64 Chev sta wgn V8 std shift, radio, a-c runs well, gd work or fishing car, 332-2229.

71 International Travelall V8, auto, air, power str & br, loaded 488-5259.

72 Vega sta wgn 12,000 mi air, auto, power str, gold color, x/nt cndn, 554-3976 aft 4:30 p.m.

72 Suzuki 125 cc trail street, 700 mi, x/nt cndn, \$450, 333-4713 after 6 p.m.

72 Vega hatchbk, auto, air radio, delux int, gd mi, silver color, better than new 333-3988.

65 Ford wgn, 10 passenger, cntry sedan, a-c power str, & br. \$400. 534-3385.

67 Chev Impala 9 passenger sta wgn, fact air & heater gd tires, low mi radio, rear spker, one owner, 332-3915.

66 Chevy 11 Nova, 2-dr hardtp, 6 cyl, auto, air, radio, heater, nw tires, one owner \$450. 721-1432.

66 Chevy Corvette Conv, x/nt cndn, 372 engine, nw clutch & br, 474-2369 after 5 p.m.

71 Toyota M 11, 4-dr, ai, radio, x/nt cndn, must sell, \$1900, sacrifice at \$150, ov wholesale, 333-4627.

68 Lincoln Cont, 4-dr, air auto, pwr str, light green color, x/nt cndn, \$1450, firm 534-5126 aft 5 p.m.

67 Valiant Signet, 6 cly, auto, air, radio, heater, vinyl tp, \$800. 944-5818.

69 El Camino Custom, pwr s & b, radio, a/c, 350 V-8, auto, vinyl tp, tonneau cvr, nw whwalls and mag whs, \$2095. 479-7815.

72 Grandville Pontiac, ps, pb, air, white, less than 2,500 mi, prfat in evry resp., take up note, 332-4228.

PROPERTY AND RENTALS

League City Pecan Forest, 3-2-2, 1600 sq ft, rent, no lease required, 333-2880 or 488-3353.

House, Spanish, 4-2 1/2-2, 2100 sq ft, court yd, patio, lge fenced lot w/ trees, Nassau Bay, 333-3988.

Kirkwood, 3-1 1/2-2 Spanish brick, carpeted, cent a/h 7% loan, \$2,500. equity, 481-4336.

3 half-acre bldg lots in Roman Forest, section 3, available at less than current market price, 471-4305.

2 Lakefront Townhouse lots on Lake Conroe, in sect 1 of US lands Cape Conroe area, 471-4305.

House for lease, League City, 3-2-2, carpet, drapes built-ins, large fenced yd, trees, brick, 554-5729.

3-2-2, League City, Meadowick, will make very good deal, Grogan, x6361.

Custom brick 3-2-2, \$26,500. located ub Dickinson's wooded area. Fireplace in spacious fam rm. 6 3/4% int. 534-3670, aft 5 pm.

Timber Cove 4-2-2 Contemporary, bg pines, oaks, fence, deep shag, 2300 sq', \$35,900. 332-2561 nights 334-2382.

WANTED

Would like rde ito NASA from UH 4 days a week leaving at noon, will gladly help with expenses, Alice HU 3-4048.

Dehumidifier, 483-5165 or 331-3455.

Spanish or comtemp 4-2 1/2-2 Oakbrook West or equiv, 774-6602.

Spineit, onsole or baby grand piano, Marlow 2731.

BOATS

Glastron CV-16, new, 130 hp 270 out-drive, goldflake finish, fully loaded, many extras, big wh Shoreline trailer, used 4 times, \$3495. 721-1432.

19' Chris Craft w/ 80hp Johnson Seahorse O/B, hull need paint, tilt trailer, \$1100 as is, 488-2327.

Info on prices & cndn of used Lidars for sale by owners, 334-2392.

Fully rigged Bass boat, \$1295, 14 ft sidewinder, 50hp Mercury, 2 yrs old, Galv. Trailer-nw tires dept finder. 2 batteries, st str, spt light, carpet, 2 gas tanuks, 479-1397.

16' Fiberglass Runabout, 75hp Evinrude, fully equipped, for demonstration, call 488-6833 or 334-4672.

14' Hobie Cat, slight damage to rigging, must sell, \$775 or best cash offr. 334-1251.

18' Gaspar Deep V pleasure boat, bg wh tr, w/135hp Chrysler outboard, \$1995. 479-7815.

PETS

German Shepherd, female, med size, ped & reg, gentle, shots \$65. 554-5417.

Poodle puppies apricot, silver & black, 35. 482-7883.

AKC reg bl/tan Dachshunds, 9 wks, 1 male, 2 females, 481-4336.

Black male toy poodle, AKC, housebroken, very good w/ children, \$40. 332-1185.

Unusual pet, 4' Boa Constrictor. Includes 10' showcase and smaller retaining cage, \$70. 334-2354.

8 mo old Filly, pt Apaloosa, \$100. 488-0661.

LATE ENTRIES

Boy Quarter Horse Mare, 6 yrs old, 14 hands hi plus saddle, \$300, 482-7987 after 4:30 p.m.

Heater gas space like new, was \$45. bargain at \$27.50 GR 2-6910, no calls Friday eve, or Saturday.

Japanese made wind proof lighters, nw 50c ea, GR 2-6910.

65 Catalina, pwr steer and br, gd tires, air, radio, \$400 or best offer, 472-5310 after 5 p.m.

68 Yamaha console piano like new, \$695. 482-7987 after 4:30 p.m.

Mini bike, go kart or ATV engine, McCulloch 91-A, 15 LBS w/ expansion chamb, \$75. Margay gearbox fr go-kart or ATV, 4 gears sets, clutch and clu box, \$50. 334-1895.

House for lease, 4-2-2, central air and heat, blt-in kitchen, living rm and den, intercom, in Bayou Brae across fm Clear Creek Hi School, 334-2844.

USMC officer's uniforms, blue, white, green, tropics, utilities & accessories, finest materials, 488-0406.

Wants 4-5 hp aircooled outboard motor, 643-4151.

Boosey & Hawkes B-flat clarinet, hardly used, \$90. 481-1502.

67 Pontiac Lemans, 2-dr, V8, auto, air, ph-ps, new tires and exhaust sys, x/nt mechanical cndn, grt for work or 2nd car, \$500, 479-6835 after 5 p.m.

72 Pinto sta wgn, squire pkg, bkt, seat, lug rack, auto am-fm stereo w/ tape deck, 9,000 mi, like new one owner, \$2,900 481-2615.

Beautiful gold tweed early American Simmons hide-a-bed couch, like nw, \$150, 482-7990.

Wants couple to share driving and expenses to KSC & return for Apollo 17 launch. MajorSnyder, 483-6381.

JIMMY WARREN MEMORIAL BOWLING LEAGUE

TEAM	W	L
Hexes	22	14
Ascenders	26	10
Ball Busters	22	14
Spoilers	21	15
Team 9	20	16
Alley Oops	19	17
Jockers	18	18
Clowns	17 1/2	18 1/2
Hertz	16 1/2	19 1/2
Fabricators	14 1/2	21 1/2
Pin Pounders	14	22
Mixers	14	22
Strikeouts	14	22
Chokers	13 1/2	22 1/2

The Strikeouts had high game and series for the night with a 1053-3041 set.

Charlie Skillman came up with a new high series by rolling a 225-624 scratch for a 705 with handicap. Ron Durkee had another fine set with a steady 205-200-215 for a 620 scratch series.

Other good scores were:

J. Belan	227-584-686
Bob Jag	208-578-686
B. Swenson	200-582-660
Al Shields	215-578-653
Nick Jevas	220
Ken Baker	218
Frank Morgan	212

ERTS-1 Abstracts Now Available

Abstracts of technical reports on imagery received from the first Earth Resources Satellite (ERTS-1) are being published in a new weekly bulletin funded by NASA. This bulletin is prepared and distributed by the National Technical Information Service of the Department of Commerce.

Entitled "NASA Earth Resources Survey Program Weekly Abstracts," the bulletin contains titles of one to five page reports on the status of ERTS-1 investigations as of July and August. Future issues will list separately the reports which investigators identify as significant such as new

findings in a particular discipline as a result of ERTS-1 data.

ERTS-1, launched by NASA from the Western Test Range, Lompoc, Calif., on July 23, is providing data for distribution to specialists of the United States and many countries in numerous disciplines in the use of agricultural, mineral, marine and other resources. This publication will make findings of these investigators promptly and widely available. ERTS-1 imagery is available to anyone from sales outlets established by the Departments of Interior, Agriculture and Commerce.

Kiwanians Seek New Club Members

The Kiwanis Club of Clear Lake is currently seeking new members. The Club is in search of men interested in community involvement and good fellowship. Those interested should contact Mr. Charles Sexton, Assistant Administrator, Clear Lake Hospital, 332-2511.

Astronauts Start Health Program

A Flight Crew Health Stabilization Program designed to protect Apollo 17 Astronauts Eugene A. Cernan, Ronald E. Evans and Harrison H. Schmitt from exposure to infectious diseases will go into effect Wednesday, November 15.

—Crew health is stabilized by implementation of epidemiology, clinical medicine and immunology programs and limitation of the number of outside contacts with the flight crews.

—Prime and backup crew members will reside solely in the Crew Quarters in the Manned Spacecraft Operations Building from November 15 until launch.

—Access to primary training areas used by crew members will be controlled by KSC security forces while occupied by flight crews.

—Crew members will use personal vehicles when traveling from one primary area to another.

The primary contacts remain under disease surveillance during the post-launch period. Identification of illnesses that might occur among primary contacts during this time will aid in the diagnosis and treatment of flight crews should similar symptoms develop in them during or immediately after the mission.

Watch your savings grow.



Take stock in America. Buy U.S. Savings Bonds



ASTRONAUT'S LAST SIMULATION—Astronauts Harrison Schmitt (left) and Eugene Cernan (right) are aboard the "Grove" This is their last "earth ride" before the Apollo 17 launch.

Attempts to Outpace Sound Led to Flight Research Center

Leroy Proctor, employed by MSC's Information and Systems Division, was recently honored at an anniversary dinner in Edwards California. The dinner was held to celebrate 25 years of advanced flight research.

Employed in the Instrumentation Division, Proctor was one of the 14 original staff members of the Flight Research Center. Reflecting upon his days at Edwards, Proctor said:

"One of the highlights of my career with NASA was working with the original crew at the Flight Research Center. The close team work that existed between the staff has led to the success of many projects."

Beginning with man's attempt to fly faster than the speed of sound, NASA's Flight Research Center has indeed played an important role in establishing this country's leadership in world aeronautics.

Muroc Air Force Base was an ideal location for the X-1's (the first of the research aircraft to exceed the speed of sound) flights not only because its remoteness and favorable climate offered additional advantages for a program of this type.

Accordingly, in October of 1946, the X-1 was shipped to Edwards, accompanied by 14 National Advisory Committee for Aeronautics (predecessor of NASA) engineers, instrument technicians, and test observers.

The extended research program, under the direction of Walter C. Williams, the first chief of the original High Speed Flight Station, was begun with the first successful power flight of the X-1 in December, 1946. At that time, the NACA unit under Mr. Williams was considered a unit of the Langley Laboratory detailed on temporary assignment to Muroc.

The X-1 airplane assigned to the Air Force was delivered in August, 1947, but it was not until March 1948 that the NASA X-1 was available for tests. The earlier Air Force flights resulted in the first supersonic flight by Captain Charles E. Yeager on October 14, 1947. The first supersonic flight by a civilian in the

X-1 occurred on March 4, 1948, made by NASA pilot Herbert Hoover.

In 1949, the NASA Muroc Test Unit had moved from its makeshift facilities in an Air Force hanger to a small hanger

Later, the same airplane was used in connection with the noise problems of jet aircraft. NASA engineers cooperated with the Air Force in a similar program with a Boeing B-52, augmenting the work already done with the

and the flight results from these three aircraft, capable of leaving and reentering the earth's atmosphere, provided valuable aeronautical data. During these flights, new highs of 4500 mph and 354,000 feet were achieved by

The third lifting body shape, the X-24A, was built by the USAF and joined the flight test group in 1968.

Originally designed as a USAF bomber the giant XB-70 was turned over to the Flight Research Center in 1967 following two years of contractor USAF flights. Flights at speeds up to 2000 mph gathered data for the design of future large high speed aircraft.

The high speed research continued with the use of the YF-12 aircraft at sustained cruise speeds of Mach 3 and altitudes above 80,000 feet. This program is providing a wealth of information that will be vital to the design both military and commercial, as of future high-speed aircraft, both military and commercial, as well as the space shuttle.

A new airfoil shape developed in the wind tunnels at the NASA Langley Research Center showed extreme promise for possibly reducing the cost of future air transportation. Called the Supercritical Wing, it was installed by Center engineers and technicians on an extensively modified Navy jet fighter.

Flight tests conducted during the next several years confirmed that the new wing did permit the aircraft to cruise at speeds close to the speed of sound with no increase in fuel consumption.

An F-111 aircraft is currently being readied for installation of a second Supercritical Wing. Flight tests could occur next year.

The use of spacecraft technology has spread to the newest of the Center's research aircraft. A converted Navy F-8 Crusader has had most of its mechanical flight control system. This Fly-By-Wire control system uses a digital computer from the Apollo spacecraft and a network of electronic control circuits. Control systems of this type could make air travel of the future smoother by reducing many of the aircraft vibrations.

As in the past 25 years, the Flight Research Center will continue to be utilized for all of the advanced flight research within the National Aeronautics and Space Administration, and continue as the focal point of the nation's most advanced aircraft research programs as well as the scene of historic advances in the evolution of aeronautical and space sciences.

Christmas Party Coming Soon

The annual Children's Christmas Party is scheduled for December 2, from 2 p.m. to 4 p.m. in the MSC auditorium. Children ages 2-10 are invited.

Tickets at \$1, each may be purchased from EAA representatives soon.



RECEIVES ANNIVERSARY PLAQUE—Leroy Proctor, MSC employee, received this plaque recently at an open house and ceremony commemorating 25 years of flight research at the Center in Edwards, California. Proctor was one of the 14 original employees of the Flight Research Center. He has been with MSC since 1962.

and lean to buildings leased from the Air Force. In the fall of 1949, the unit, numbering about 60 persons, was permanently established at Edwards as the High Speed Flight Station.

From 1950 to 1953, a variety of projects were undertaken. These included, in 1951, flight research with the X-5, unique aircraft capable of varying its wing sweep in flight. In 1952, the XF-92A, the United States' first delta wing aircraft was the subject of detailed investigations of pressure distribution on its surfaces. The research done on the XF-92A by the Center was instrumental in the development of the delta wing configuration now seen on the F-102, F-106, and B-58 airplanes.

By 1953, it was apparent that the work done at Edwards for the NASA flight research program would continue indefinitely. Accordingly, a Congressional appropriation was obtained for construction of hangar and office facilities and lease of 175 acres at Edwards Air Force Base. The Center complement at this time had increased to 222 employees.

The years 1953 and 1954 saw an increase in the scope and amount of work done in flight research. During this period a B-47 was heavily instrumented for testing of loading effects and stability and control.

B-47 and extending research knowledge well into the transonic speed ranges.

Initial flight tests of the X-1A series airplanes were made during 1953. These rocket powered aircraft differed from the original X-1 in cockpit configuration and in rocket fuel capacity.

Soon after the X-1 and the X-1B airplanes were delivered to the NASA at Edwards as part of a cooperative program between the manufacturer, the Air Force, and NASA.

The X-1B continued to yield data until its retirement to the Air Force Museum at Wright-Patterson Air Force Base in January, 1959. One of its later contributions was the flight testing of reaction controls at high speeds and altitudes.

These controls were incorporated in the design of the X-15 and served as prototypes to those on the Mercury capsule.

The transition of the NACA to the National Aeronautics and Space Administration was accomplished in October of 1958. In September, 1959, the Station was officially designated the NASA Flight Research Center. Also in September, Mr. Paul F. Bikle succeeded Walter C. Williams as Director of the Center.

The first X-15 flight was made in September of 1959. A total of three aircraft were produced

the aircraft.

In the early spring of 1962, a unique vehicle called the Parasev (paraglider) was flown. The project was designed to evaluate the characteristics of a Rogallo wing vehicle for recovery of manned spacecraft.

In 1963, another new shape made its first flight. The plywood M2-F1, towed by a C-45 and then released for glide flight, was the forerunner of a whole new series of flight research craft that would continue flying through the decade.

In the fall of 1964, a small group of engineers and technicians returned to the old South Base, the original site of the flight research effort. Here they began flights in the Lunar Landing Research Vehicle, or LLRV, a free-flying simulator designed to develop the piloting procedures for use during the final phase of the manned lunar landing. The value of the LLRV is attested to by those astronauts who have landed on the moon.

The success of the M2-F1 lifting body program hastened the construction of two heavy weight lifting bodies, the M2-F2 and HL-10, based upon studies at the NASA Langley and Ames Research Centers. The M2-F2 was first air launched from a B-52 in July, 1966 and the HL-10 was launched six months later.

Pecan Crop Fails 2nd Year in Row

For the second consecutive year, MSC's pecan crop has failed. The trees were inspected about two weeks ago and there are not enough pecans to warrant a harvest.

Hopefully with some tender, loving care the grove will produce next year.